

are overlapped in time that these two terminals are placed in different regions of satellite beams. The cited section of Rouffet does not support this position. Instead, the cited section discusses a beam hopping technique and that “[t]he conditions for non-collision of transmission-reception packets is interpreted geometrically by the separation of the E/R bands drawn in full lines in the range of *altitudes* between Dmin and Dmax.”² The *altitudes* referred to here by Rouffet relates to that of the satellites. To be sure, just prior to the cited section Rouffet discusses that “[t]he most troublesome interference is that emanating from a satellite at a low elevation when a high elevation satellite is in use”.³ Thus, Rouffet discloses that collisions are avoided based on the altitudes of satellites. In contrast, Applicants’ claim 1 involves spacing apart the *terminals*.

The Office Action cites Emmons for the disclosure of “Time division duplex (TDD) satellite communication system and spacing apart”.⁴ In particular, the Office Action cites the Abstract and column 5, lines 19-42 of Emmons for the disclosure of “spatial separation to accommodate TDD links”.⁵ The spatial separation discussed in the cited portions of Emmons relates to the separation between satellites to achieve spatial diversity, which involves:

two separate and independent communication paths, namely first and second TDD links 54 and 56, are used for transmitting the same information in order to mitigate the effects of fading, transmission loss, interference, and so forth.⁶

² Column 7, lines 31-34. (Emphasis added).

³ Column 6, lines 59-61.

⁴ Page 3.

⁵ *Id.*

⁶ Column 4, lines 41-45.

Emmons' disclosure of spatial diversity in which the same information is transmitted from satellites that are spaced apart does not disclose or suggest spacing apart ***terminals*** as required by Applicants' claim 1.

Because Rouffet and Emmons at best disclose using spaced apart satellites to combat interference, even if one skilled in the art were motivated to combine Rouffet and Emmons, the combination would not disclose or suggest that:

when the transmit time slot for one terminal causes a transmission from that one terminal to be received at another terminal overlapped in time with a receive time slot allocated for the other terminal, then those ***two terminals are spaced apart in distance***, such that an interference path between the two terminals is negligible.⁷

Thus, the combination of Rouffet and Emmons does not render claim 1 obvious.

The combination of Rouffet and Emmons does not render claims 4 and 5 obvious because the combination does not disclose or suggest that "terminals use navigational information to estimate their propagation delay to the satellite" as recited in claim 4 and that "the satellite transmits ephemeris data to the terminals to aid in determining the propagation delay" as recited in claim 5. The Office Action cites column 6, lines 13-18 of Rouffet as disclosing the elements of claims 4 and 5. This section of Rouffet discusses a synchronization process in which the terminal acquires a signaling channel and transmits a message used to determine a time delay. Because the message is transmitted from the terminal to the satellite, the propagation delay would be calculated by the satellite, whereas claim 4 requires that "***terminals*** use navigational information

⁷ Emphasis added.

to estimate their propagation delay to the satellite”⁸. Additionally, there is nothing in Rouffet indicating that the signaling channel includes “navigational information” as also required by claim 4. Nor is there any mention of *ephemeris data* as required by claim 5. Emmons does not remedy these deficiencies of Rouffet, and accordingly the combination does not render claims 4 and 5 obvious.

The combination of Rouffet and Emmons does not render claim 6 obvious because the combination does not disclose or suggest that “the position of each terminal is determined by the satellite, using location data provided by each terminal.” The Office Action cites column 2, lines 63-column 4, line 4 of Rouffet as disclosing the elements of claim 6. This section of Rouffet discusses various aspects of a satellite communication system, but is completely silent with respect to the satellite determining the position of a terminal in the manner required by claim 6. Emmons does not remedy these deficiencies of Rouffet, and accordingly the combination does not render claim 6 obvious.

The combination of Rouffet and Emmons does not render claim 7 obvious because the combination does not disclose or suggest that “wherein downlink timeslots are allocated to terminals at random.” The Office Action cites the time slot structure of Figure 4 of Rouffet as disclosing the elements of claim 7. There is nothing in this figure or the associated description indicating that the time slots are allocated at random. Emmons does not remedy these deficiencies of Rouffet, and accordingly the combination does not render claim 7 obvious.

⁸ Emphasis added.

The combination of Rouffet and Emmons does not render claim 9 obvious because the combination does not disclose or suggest that “terminal receive time slots are allocated randomly.” The Office Action appears to cite to Figure 4 of Rouffet, which as discussed above does not indicate that time slots are allocated at random. Moreover, claim 9 further requires that allocation of terminal transmit time slots includes the steps of:

1. calculating the minimum distance between a transmitting terminal and a receiving terminal which receives the transmission;
2. repeating this calculation for all terminal transmit time slots;
3. repeating the calculation for all terminals;
4. calculating the resulting interference if each terminal used its worst terminal time slot;
5. ranking the terminals according to which cause the worst interference with another terminal; and
6. starting from the worst terminal, allocating the best time slot for that terminal, discarding terminal transmit time slots where transmit and receive time slots overlap in the same terminal.

The Office Action has not indicated how Rouffet or Emmons discloses these six steps. Accordingly, if this ground of rejection is maintained, Applicants request that the next Office Action provide citations to Rouffet and/or Emmons for disclosures of each of these six steps. Thus, the combination of Rouffet and Emmons does not render claim 9 obvious.

Claim 10 recites a method with similar elements to those discussed above, and it patentably distinguishable over the combination of Rouffet and Emmons for similar reasons. Claims 2, 3, 8, 11 and 12 are patentably distinguishable at

least by virtue of their dependency. Accordingly, the rejection of claims 1-12 for obviousness should be withdrawn.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323, Docket No. 038819.57537US.

Respectfully submitted,

June 30, 2010

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